

# ***Headquarters U.S. Air Force***

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*Integrity - Service - Excellence*

## ***The State of Air Force Human Systems Integration [HSI]***



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***MANPRINT Practitioners  
November 2006***

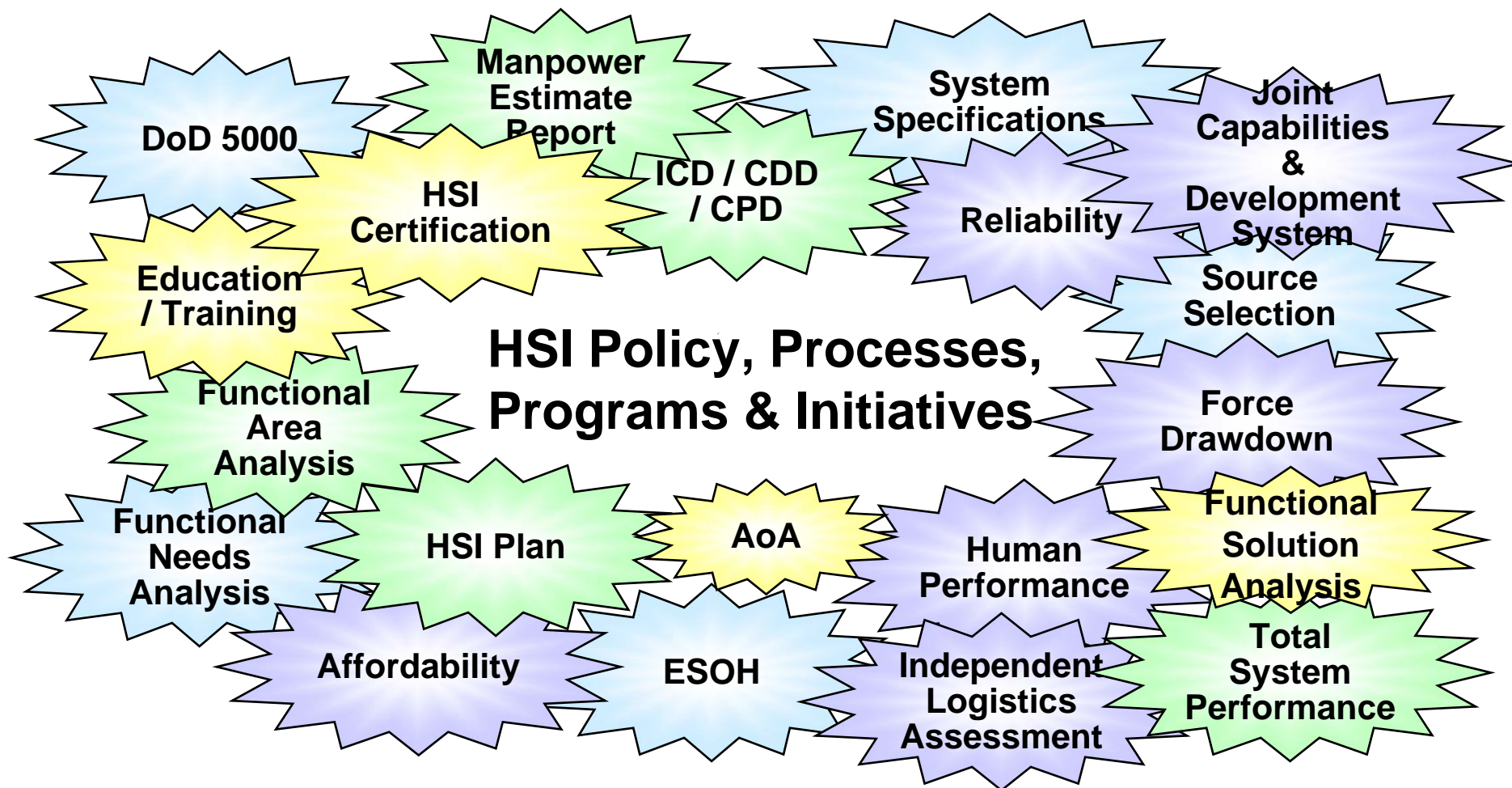
***Dr. Rick Drawbaugh, SES  
Principal Advisor, HSI  
Office of the Vice Chief of Staff***

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# Human Systems Integration: Context



HSI uses existing processes.



# HSI just isn't getting done in the AF

## History & AFSAB Findings

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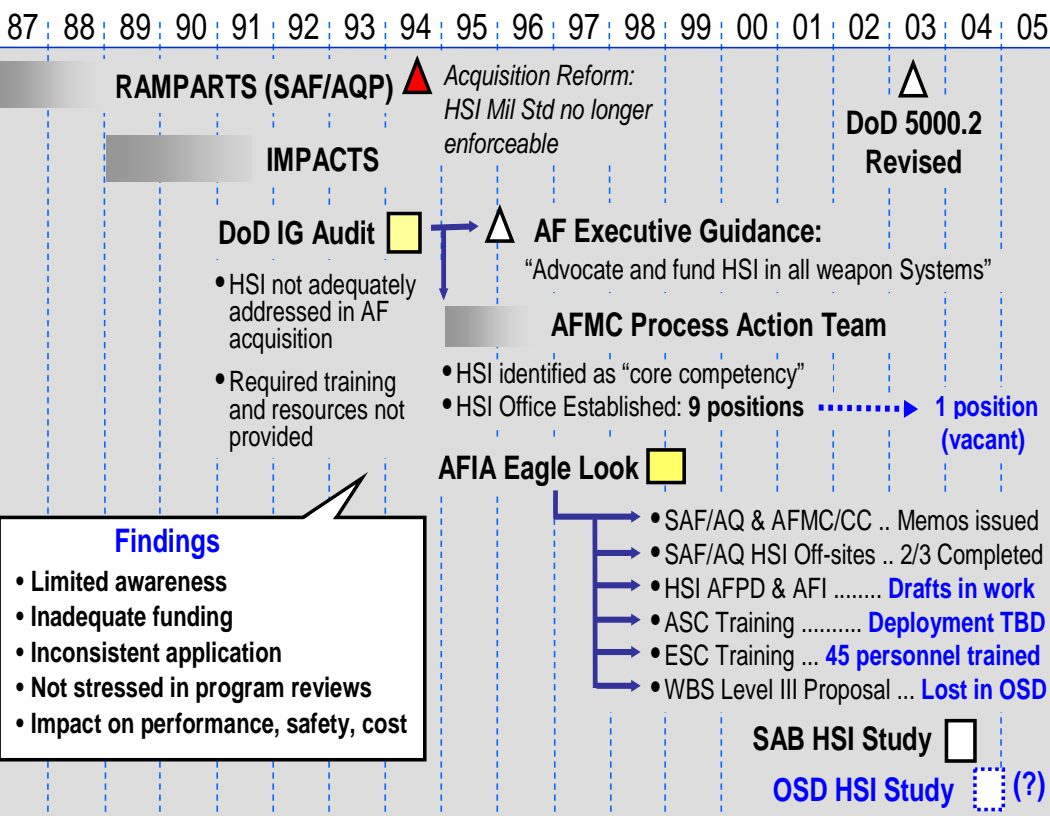


### History of USAF HSI Initiatives



### SAB Findings

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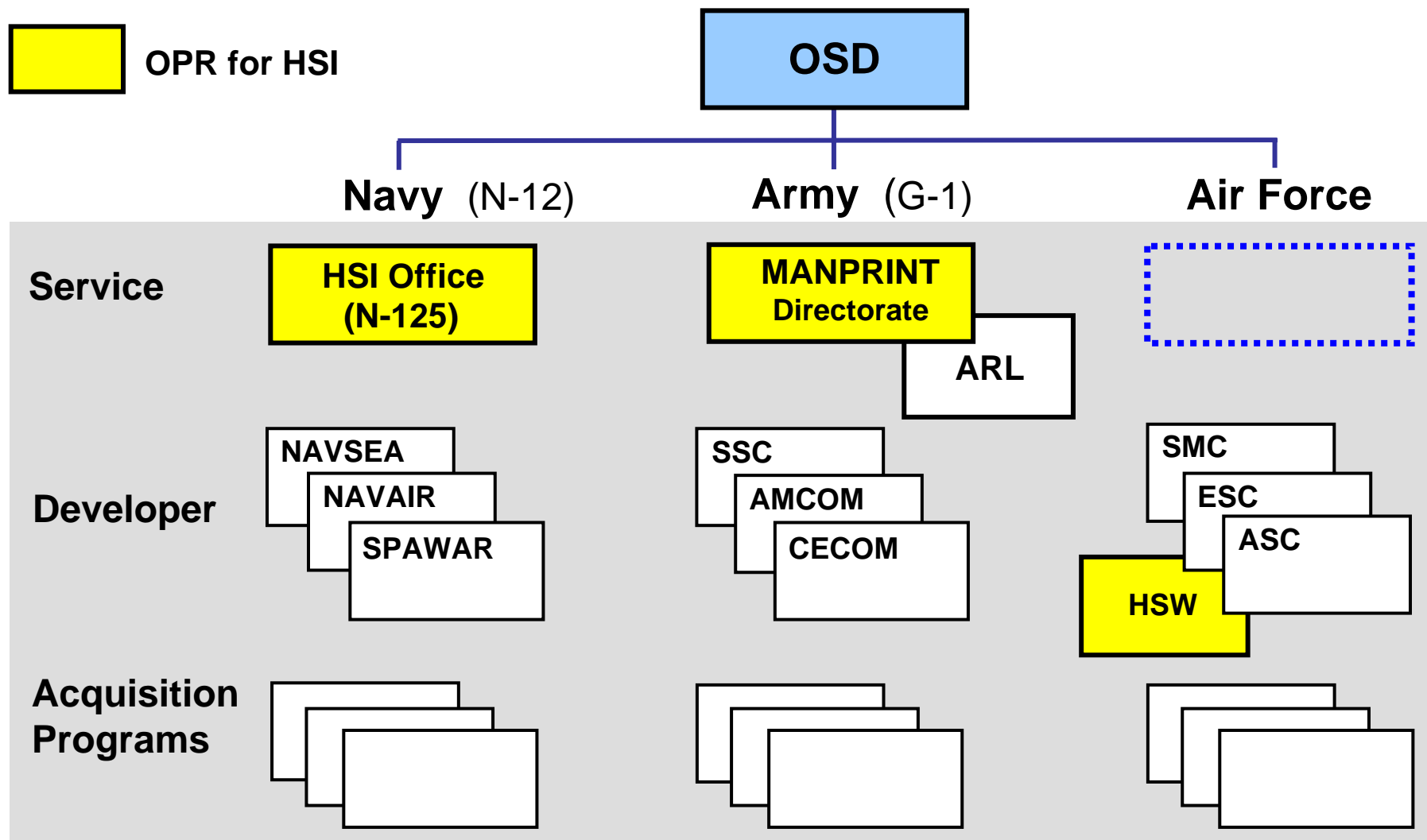


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# HSI Organization and Leadership

## Inter-Service Comparison

As of: October 2004





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# ***AF HSI Revitalized***

## ***Vision and Mission***

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### **Vision**

**Integrating Air Force people and technology for total systems performance.**

### **Mission**

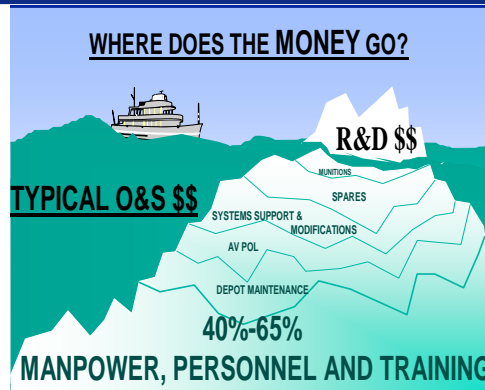
**Ensure all AF warfighting systems are designed, built, operated, and sustained in a manner that optimizes human performance at every warfighter level.**



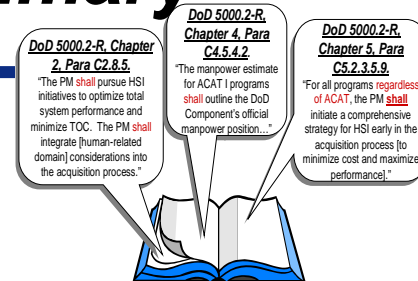
# Human Systems Integration: Summary

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- HSI no longer Optional for AF
  - LCC growth threatens capability
  - Human integration = max effectiveness
  - Future warfare demands effective HSI
  - Policy & direction require it
- Effective HSI demands focus & persistence
  - Top Down Leadership
  - Right Resources: people / budget
  - Integration/Teamwork: All levels
- DoD is in Transformation
  - AF last to the HSI table
  - Army & Navy demand HSI on all systems
- HSI: The missing link
  - Support and enhance warfighter
  - Protect R&D accounts
  - Shape AF for the Future
  - Guarantee Air & Space Superiority



*“Air Force.. eliminate “stove-piped” systems that actually inhibit integration”*



**We must guarantee a permanent Air Force cultural and organizational change – to ensure AF war-fighting systems optimize & sustain human performance at every war-fighter level.”**





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# ***AIRPRINT HSI Program Objectives***

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## **Ensure HSI program:**

- Consistent with SAB findings & recommendations;
- Complies with OSD & Congressional HSI initiatives;
- Implements effective & sustainable HSI program;
- Preserves and integrates existing HSI resources;
- Implements within existing processes / constraints;
- Supports the entire Air Force and AFMC communities;
- Facilitates total systems performance; and
- Reduces life cycle costs.



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# ***AIRPRINT HSI Program Activities to Date***

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## **Education**

- HSI website and community of practice currently available
  - HSI 101 Course Developed; under revision (AFIT)
  - HSI 201 Course & Roadmap currently under development
  - HSI on-site road-show developed; requires validation and accreditation
  - Identify existing AF, Army, Navy courses for HSI training; work attendance policies
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- **Provide system engineering training for HSI specialists**
    - Systems Engineering AFI in coordination (HSI included)
    - Provides justification for subject training
    - Task 311<sup>th</sup> HSW to begin dialogue with (AETC / AFIT)





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# ***AIRPRINT HSI Program Activities to Date***

## **Science and Technology**

- **Strengthen HSI collaboration between AFRL & product centers**
  - IAM construct under AFRL
  - AIRPRINT Office sponsoring multiple studies – includes AFRL
  - NRC study looking at HSI tools & gaps
  - AFRL/HE working with Product Centers and Battle Labs
  - HSI S&T roadmap in work
- **Establish focused S&T initiative to address HSI process gaps**
  - AIRPRINT engage HPE FAWG – solidify HSI foundation
  - Insert HSI into S&T processes (i.e., CRRA, AFRL S&T annual review, battlelabs, ACTDs, ATDs)
  - Looking to Project Air Force and other studies to help focus



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# ***AIRPRINT HSI Program Activities to Date***

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- **Implementation**

- **CSAF & CV advocacy, AIRPRINT Office**
- **AFPD and AFI coordination**
- **SE AFI in final coordination with HSI included.**
- **Working with MAJCOMs**
- **Roadshow being refined (train leadership / HSI POCs)**
- **Draft HSI Capabilities Based Requirements Dev Guide**
- **AIRPRINT assessments required by AFPD / AFI**
- **311<sup>th</sup> HSW lead for HSI domain assessments**
- **Assign AFMC IAM concept moving forward**
- **OSD / Congressional survey to baseline HSI in programs**



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# ***HSI: Results to Date*** ***AIRPRINT***

- **Air Staff & CV Concurrence - AF/CV Lead**
- **Now Staffing – AIRPRINT Office & Field Orgs.**
- **Supporting Joint HSI efforts**

## ***Now We must!!***

**First – Integrate Air Staff Support**

**Second – Transition AIRPRINT into AFMC**

**Third – Embed AIRPRINT into MAJCOMS**

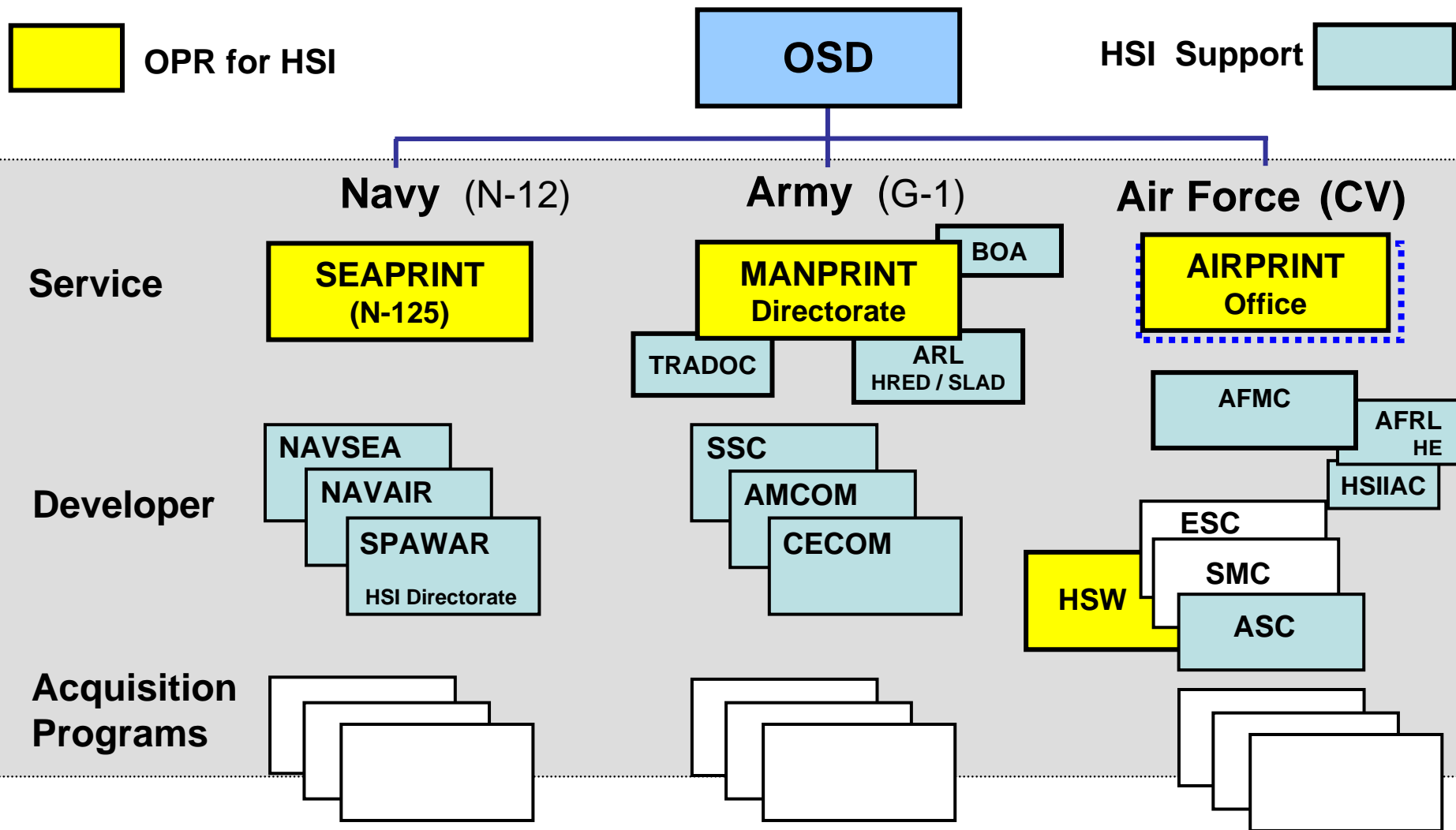
***The purpose: permanent Air Force cultural & organizational change –  
optimize & sustain human performance at every war-fighter level.***



# Human Systems Integration: Inter-Service Comparison (**Now**)

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As of: October 2006





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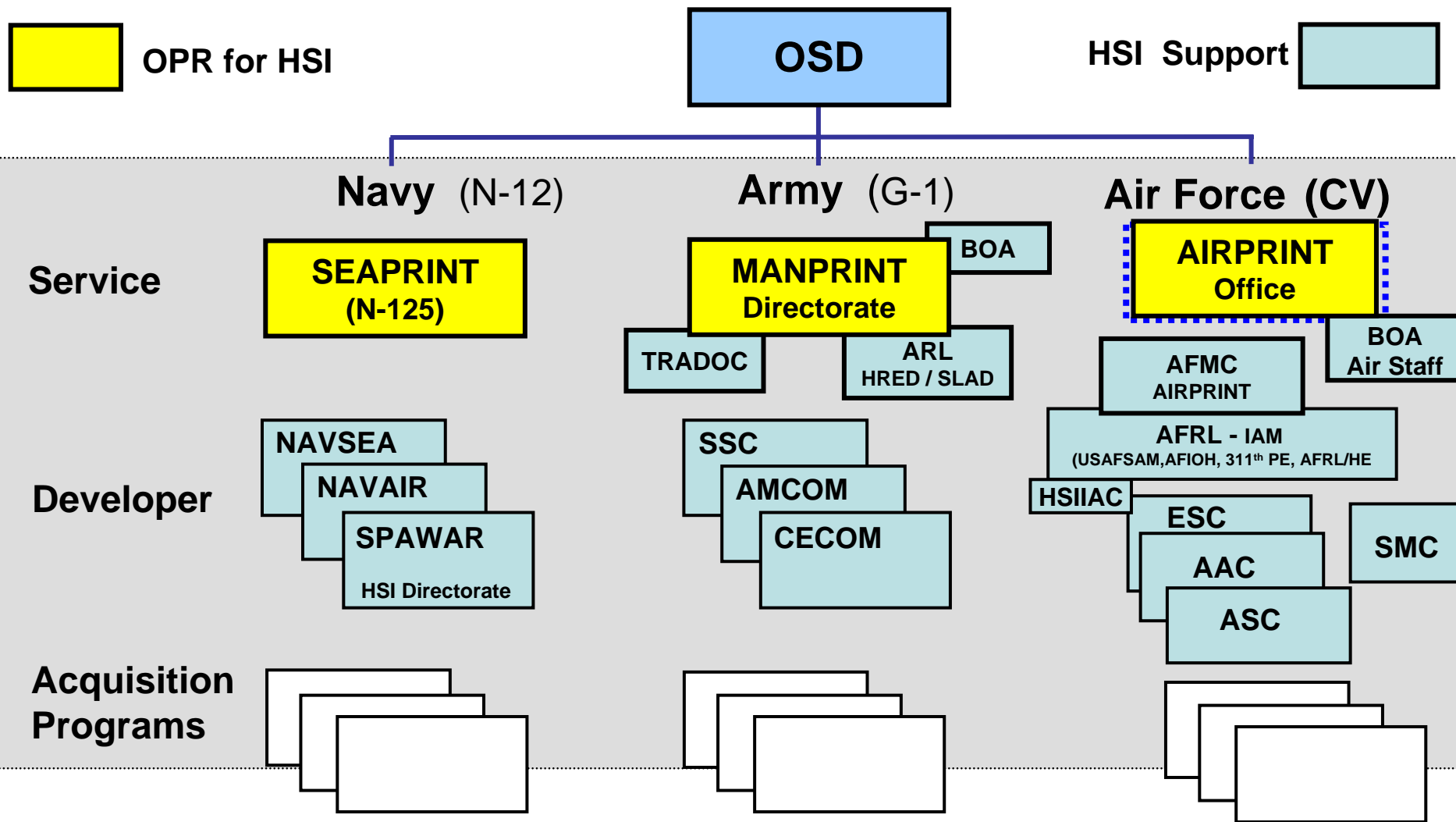
# ***AIRPRINT HSI Program Milestones Ahead***

1. Establish Air Staff Overarching IPT.
2. Transition support from SG to all Air Staff
3. Research, Development, and Technology roadmap
4. Consultation & Assessment Methodology
5. Education and Training.
6. Establish benchmarks
  - Support and finalize OSD / Congressional tasking
  - Visit MANPRINT, ARL-HRED, SEAPRINT and Dahlgren
  - Identify industry counter parts
  - Analyze MANPRINT / SEAPRINT processes / services
  - Visit academia / industry
  - Develop return on investment (ROI) methodology / track effectiveness
  - Establish benchmark and self-inspection criteria
  - Conduct formal HSI program audits (IG Inspections)



# Human Systems Integration: Inter-Service Comparison (*Proposed*)

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# ***Challenges and Issues***

- **OSD / AT&L need to be engaged in HSI**
- **AFPD & AFI for HSI Need Immediate Attention**
- **Other Domain Integration Issues**
  - IPT for HSI Domain Owners to finalize strategy, business plan
    - Finalize domain ownership responsibility
    - Define working relationships
    - Identify key domain issues to work immediately
  - Need Immediate attention to solidify / finalize inclusive SE AFI
- **Unique Air Force Opportunities**
  - AFSO 21 participation / support
  - Systems engineering outreach (INCOSE, AFMC)
  - New IAM Construct
  - Preserve HSI assets in the drawdown.
  - Facilitate the drawdown with good MPT analyses
  - Work key programs now to prevent Major HSI issues downstream
  - Leverage Congressional support similar to Army & Navy HSI



# *Challenges and Issues*

- **HF, HFE, HPE, HSI, Experimental Psychology**
  - How do we best work together?
  - HSI is emerging as an academic program – curricula issues?
  - HPE / HSI are co-suppliers and co-customers – best relationship?
  - HF, HFE, ABS practitioners and Systems Engrs. Best candidates to lead HSI ?
- **Other Domain Integration Issues**
  - Systems engineering appears to be best location for integrated execution
  - How many key players constitute a solid HSI team
  - What education and training and certification issues are there
  - How can the HFES best facilitate HSI integration
- **Unique HFE TAG Opportunities**
  - Systems engineering outreach (INCOSE, AFMC)
  - New IAM Construct
  - Need for more HSI practitioners across all services
  - New tools are needed for integrated HSI application, assessment, test
  - How do we preserve our assets in the drawdown
  - How do we integrate HSI across DoD, Gov't, Industry, Allies